

## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

**PCT**

NOTIFICATION CONCERNING  
TRANSMITTAL OF COPY OF INTERNATIONAL  
PRELIMINARY REPORT ON PATENTABILITY  
(CHAPTER I OF THE PATENT COOPERATION  
TREATY)

(PCT Rule 44bis.1(c))

To:

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Austin, TX 78701-4039  
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Date of mailing (day/month/year)

29 September 2005 (29.09.2005)

Applicant's or agent's file reference

066639.0126

**IMPORTANT NOTICE**

International application No.

PCT/US2004/007384

International filing date (day/month/year)

11 March 2004 (11.03.2004)

Priority date (day/month/year)

11 March 2003 (11.03.2003)

Applicant

PHASE INC. et al

The International Bureau transmits herewith a copy of the international preliminary report on patentability (Chapter I of the Patent Cooperation Treaty)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No.+41 22 740 14 35

Authorized officer

Simin Baharlou

Facsimile No. 2005 338 71 30

**RECEIVED**

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 066639.0126	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. PCT/US2004/007384	International filing date ( <i>day/month/year</i> ) 11 March 2004 (11.03.2004)	Priority date ( <i>day/month/year</i> ) 11 March 2003 (11.03.2003) ]
International Patent Classification (IPC) or national classification and IPC 7 B01D 21/26, B04B 1/14		
Applicant PHASE INC.		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input checked="" type="checkbox"/> | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 740 14 35	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Date of issuance of this report 16 September 2005 (16.09.2005)</td> </tr> <tr> <td style="padding: 5px;">Authorized officer  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Simin Baharlou</div></td> </tr> <tr> <td style="padding: 5px;">Telephone No. +41 22 338 71 30</td> </tr> </table>	Date of issuance of this report 16 September 2005 (16.09.2005)	Authorized officer  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Simin Baharlou</div>	Telephone No. +41 22 338 71 30
Date of issuance of this report 16 September 2005 (16.09.2005)				
Authorized officer  <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Simin Baharlou</div>				
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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

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17 SEP 2004

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## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

15 SEP 2004

Applicant's or agent's file reference

066639.0126

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/US04/07384

International filing date (day/month/year)

11 March 2004 (11.03.2004)

Priority date (day/month/year)

11 March 2003 (11.03.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): B01D 21/26; B04B 1/14 and US Cl.: 210/741, 781, 97, 143, 360.1, 378, 380.1; 494/2, 3, 4, 36, 37, 44, 56, 60, 85

Applicant

PHASE INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

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Alexandria, Virginia 22313-1450

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David A Reifsnnyder

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/07384

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/07384

**Box No. IV Lack of unity of invention**

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☒ paid additional fees
- ☐ paid additional fees under protest
- ☐ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:
- See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☒ all parts.
- ☐ the parts relating to claims Nos. \_\_\_\_\_

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US04/07384

**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims <u>5-8, 10, 11, 30, 35 and 36</u>	YES
	Claims <u>1-4, 9, 12-29, 31-34 and 37-42</u>	NO
Inventive step (IS)	Claims <u>5-8, 10 and 35</u>	YES
	Claims <u>1-4, 9, 11-34 and 36-42</u>	NO
Industrial applicability (IA)	Claims <u>1-42</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and explanations:**

Claims 1-4,9,12-29,31-34 and 37-42 lack novelty under PCT Article 33(2) as being anticipated by Komline who discloses a centrifuge (10) with controlled discharge of dense materials. The centrifuge (10) includes a fluid separation wall placed within a sleeve (13) to form a containment zone therebetween. The fluid separation wall aligns and rotates parallel to an axis of rotation. A receptacle (10a) forming a part of the fluid separation wall includes a void area. An opening extending through the fluid separation wall from the void area to the outer surface of receptacle transports the more dense material to the containment zone. A valve ring (col. 6, lines 40-57) forming part of the fluid separation wall includes a valve orifice (45). The valve orifice (45) aligns with the opening such that the more dense material exits the fluid separation wall and moves into the containment zone (13). Furthermore, regarding claims 17-29,31-34 and 37-42; the valve ring is oscillating and therefore slides along the fluid separation wall. In addition, regarding claim 40;the valve ring includes a plurality of vanes (38c).

Claims 11, 30 and 36 lack an inventive step under PCT Article 33(3) as being obvious over Komline who discloses a centrifuge including a separation wall as discussed above but fails to disclose a pressure sensor connected to the separation wall. The use of pressure sensors to measure pressure on a separating wall of a centrifuge is well known; therefore, it is considered that it would have been obvious to one having ordinary skill in the art at the time of the invention to have included a pressure sensor to monitor pressure on Komline's separation wall so as to know when to actuate Komline valve ring and allow the more dense material to be discharged from Komline's receptacle (10a).

Claim 5 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a pin operably engaged with the fluid separation wall, the pin extending radially from the fluid separation wall; and a slot formed in the valve ring, the slot operably formed to receive the pin therethrough and to guide the valve ring between the first position and the second position such that a valve orifice aligns with the respective opening in the second position.

Claim 6-8 meets the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest a pin operably engaged with the valve ring, the pin extending radially through the valve ring to engage a slot; the slot formed in the fluid separation wall, the slot operably formed to receive the pin and to guide the valve ring between the first position and the second position such that a valve orifice aligns with the respective opening in the second position.

Claims 10 and 35 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest an upper wedge coupled to the fluid separation wall; the upper wedge operable to restrict the movement of the valve ring; and a lower wedge coupled to the fluid separation wall, the lower wedge operable to restrict the movement of the valve ring.

Claims 1-42 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/07384

**Box No. VIII    Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

The drawings are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 7 because there is not a drawing figure which shows a density screen type centrifuge as claimed in claim 3.

Claim 3 is objected to as lacking clarity under PCT Rule 66.2(a)(v) because of the claim is not fully supported by the description. The description does not disclose the claimed invention in a manner sufficiently clear and complete for the claimed invention to be carried out by a person skilled in the art because: There is no disclosure which teaches what elements make up a density screen centrifuge. For example a density screen centrifuge must include a screen.

Claim 3 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claim 3 indefinite for the following reasons: Since no structure such as a screen has been claimed in the body of claim 3; it is vague and indefinite as to what structure the applicant intends to claim by claiming that the centrifuge is a density screen centrifuge. Furthermore, it is vague and indefinite as to how the required structure for a density screen centrifuge (i.e. the screen) is structurally related to the structure already claimed in claim 1.